Annual Report 2004

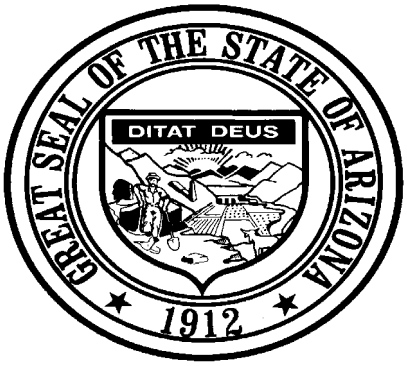
CHILDREN'S ENVIRONMENTAL HEALTH

Arizona Department of Health Services

Bureau of Epidemiology and Disease Control

Office of Environmental Health

July 2005



Janet Napolitano, Governor
State of Arizona

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INTRODUCTION

The Arizona Department of Health Services (ADHS), Office of Environmental Health, Children's Environmental Health Program is dedicated to improving environmental health where Arizona's children live, learn and play. The ADHS Children's Environmental Health Program consists of the Childhood Lead Poisoning Prevention Program, the SunWise Sun Safety School program and actively works with the Children's Environmental Health Project at the Arizona Department of Environmental Quality, the Integrated Pest Management Coalition, the Arizona Asthma Coalition and continues involvement with the U.S. Environmental Protection Agency's Border 2012 program as well as the Arizona Department of Health Services, Office of Border Health, all with the goal of improving the environment for our children.

Children spend more time outdoors and breath more air per pound of body weight than adults. They eat and drink more in proportion to their body weight. Therefore they are at greater risk to environmental exposures than adults. The Office of Environmental Health conducted an assessment of the environmental health factors that most adversely affect Arizona's children. This report was presented to interested organizations to prioritize and further develop specific objectives and strategies to reduce environmental health hazards to children.

The table below shows the environmental exposures that significantly affect the health of Arizona's children.

Ambient Air Pollutants and Asthma
Allergens and Asthma
Secondhand Tobacco Smoke and Asthma
Coccidioidmycosis (Valley Fever)
Lead Poisoning
Sun Exposure
Methylmercury in Fish
Pesticide Exposure
Noise

The full report can be found at http://www.azdhs.gov/phs/oeh/pdf/gov_chldrn_hlth_rpt.pdf.

INTRODUCTION

Through the Governor's Environmental Health Initiative, Governor Janet Napolitano stated her commitment to provide a clean and healthy environment for Arizona's children and revealed her C.A.R.E. strategy in April of 2003.

Coordinate individuals, groups, academia and government involved in children's environmental health issues, initially focusing on air quality and asthma

Assess and prioritize the environmental health factors affecting Arizona's children

Reduce the number and types of contaminants adversely affecting children

Educate citizens about environmental hazards and how to reduce children's exposure

The full report can be found at http://www.azdeq.gov/function/about/ceh.html.

From this initiative the Children's Environmental Health Workgroup was created, where staff from both the Arizona Department of Health Services and the Arizona Department of Environmental Quality meet on a monthly basis to work in partnership to address issues affecting children's environmental health. This work-group collaborates on grant projects, data sharing, and addressing environmental issues that affect Arizona's children.

Two new activities that began in 2004 were Tools for Schools and Integrated Pest Management in Schools.

The Children's Environmental Health Program participated in a symposium for Tools for Schools, a U.S. Environmental Protection Agency program which trains schools on how to carry out a practical plan of action to improve the indoor air problems using students and staff of the school.

Integrated Pest Management (IPM) is a safer and usually less costly option for effective pest management in the school environment. The IPM in Schools Project is administered by the IPM in Schools Team from the University of Arizona, which is aimed at offering a better alternative to traditional chemical calendar spraying currently used by many school districts. The Children's Environmental Health Program is working with the IPM Coalition to encourage and implement this effective program in schools throughout the state.

The health and future of our children depends on the actions taken today to improve environmental conditions.

CHILDHOOD LEAD POISONING PREVENTION

Childhood lead poisoning is a significant environmental health problem and continues to affect Arizona's children. The Center for Disease Control and Prevention (CDC) defines elevated blood lead levels for children as ≥10 micrograms/deciliter (µg/dL) of blood. [1] Lead poisoning adversely affects nearly all organ systems of the body and is especially harmful to the developing brain and nervous system. Studies have shown that a child's IQ will drop one to three points for every increase of 10 µg/dL in the child's blood lead level. Though most children do not show symptoms of lead poisoning some symptoms may include headaches, stomachaches, lack of appetite, fatigue, irritability and vomiting. At very high blood lead levels (≥ 70 µg/dL), children can suffer seizures, coma and even death.[2] Once the lead exposure is reduced further harmful effects can be stopped, it is not yet know if the damage already caused can be reversed.

Children under the age of six years are particularly susceptible to lead poisoning. Ingestion of lead through natural hand-to-mouth behavior is the primary exposure pathway for children. It is only through a blood test that lead poisoning is detected.

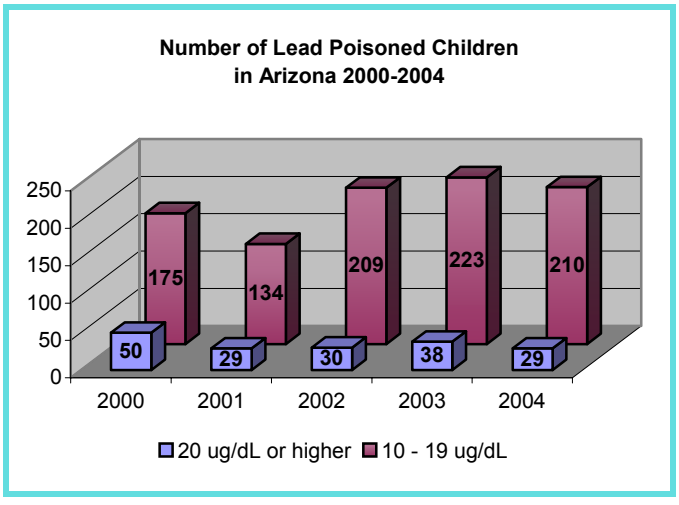
The CDC reported an overall decline of prevalence of elevated blood lead levels for the U.S. population. The latest survey for 1999-2002 revealed a 0.7% prevalence of elevated blood lead levels indicating approximately 310, 000 thousand children aged 1-5 years suffer from lead poisoning. The previous 1999-2000 survey indicated a prevalence of 2.2% or 434,000 children aged 1-5 years had elevated blood lead levels.[3]

The CDC requires that all grantees work towards the Healthy People 2010 Objective 8-11: elimination of elevated blood lead levels.[4] The CDC in partnership with the U.S. Department of Housing & Urban Development (HUD) and the U.S. Environmental Protection Agency (EPA) is working to achieve this goal.

The main responsibilities of the Arizona Childhood Lead Poisoning Prevention Program is to conduct surveillance activities, provide case management including environmental investigations and perform education and outreach activities.

Surveillance

The Arizona Lead Poisoning Registry maintains a surveillance system for recording all blood lead test results. Physicians are required to report elevated blood lead levels of ≥10µg/dL for children and laboratories are required to report all blood lead test results.[5] Laboratories and health care providers reported 239 children with lead poisoning in 2004. The number of childhood lead poisoning cases reported from 2000 to 2004 is displayed at right.

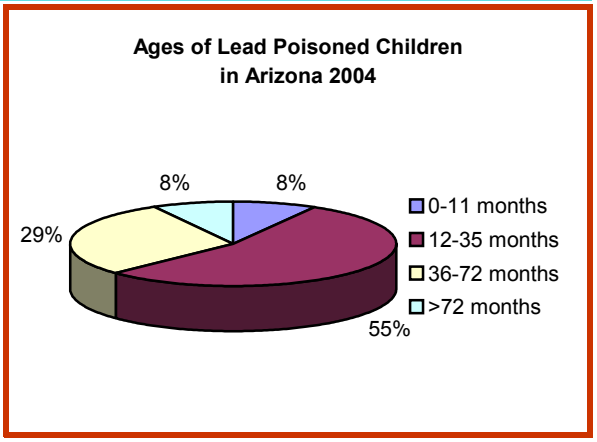


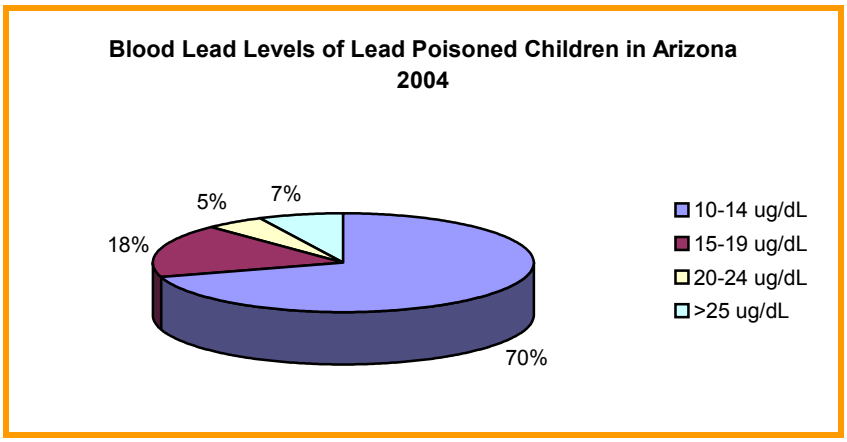
[1]Centers for Disease Control and Prevention. Preventing Lead Poisoning in Young Children: A Statement by the Centers for Disease Control– October 1991. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.
[2]Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological Profile for lead. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.
[3]Centers for Disease Control and Prevention. [Blood Lead Levels—United States, 1999-2002]. MMWR 2005;54:513-516.
[4]U.S. Department of Health and Human Services. Healthy People 2010 (conference ed, in 2 vols). Washington, DC: US Department of Health and Human Services, 2000. Available at URL: http://www.healthypeople.gov.
[5]Arizona Administrative Code R9-4-301. Title 9. Health Services. Chapter 4. Department of Health Services NonCommunicable Diseases. Article 3. Blood Lead Levels.

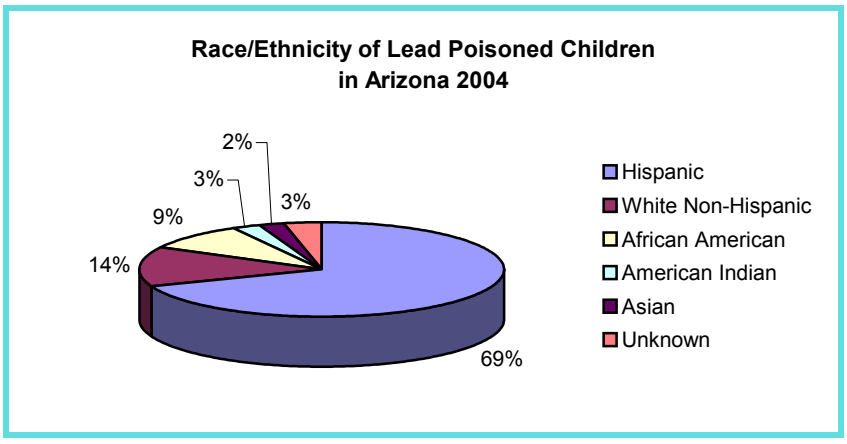
CHILDHOOD LEAD POISONING PREVENTION

Children under the age of six years are particularly susceptible to lead poisoning. Ingestion of lead through natural hand-to-mouth behavior is the primary exposure pathway for children. In 2004 the majority of children with lead poisoning were ages 12 to 35 months. The Arizona Health Care Cost Containment System (AHCCCS) Early and Periodic Screening, Diagnosis and Testing (EPSDT) Service Standards requires providers to routinely perform a blood lead test for children at 12 months and at 24 months of age and at 36-72 months of age if not previously performed.[6]

Eighty-eight percent (88%) of the 2004 childhood cases were in the mild ranges of lead poisoning (10 to 19µg/dL). The remaining twelve percent (12%) of cases were in the moderate to severe ranges of lead poisoning (≥20µg/dL).







Children in minority populations, children from low income families and children who live in older housing remain at higher risk for lead poisoning.[3] Sixty-nine percent (69%) of lead poisoning cases in Arizona were Hispanic children.

[6]Arizona Health Care Cost Containment System. AHCCCS Medical Policy Manual. July 2005. Available at URL: http://www.azahcccs.gov/Regulations/OSPpolicy.

CHILDHOOD LEAD POISONING PREVENTION

Case Management

The Arizona Childhood Lead Poisoning Prevention Program provides case follow-up that meets or exceeds the Centers for Disease Control and Prevention 2002 guidelines "Managing Elevated Blood Lead Levels Among Young Children: Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention."

Lead poisoning cases 10 to 19 µg/dL

Parents or guardians of children with elevated blood lead levels between 10 to 19 µg/dL are mailed lead education materials. Reminder letters are sent to the parents/guardians encouraging follow-up blood testing until blood lead levels are normal.

Lead poisoning cases persistently 15 to 19 µg/dL

Parents or guardians of children receiving a follow up blood lead test in this range after 3 months of the initial test are contacted by phone and provided lead education and offered an environmental investigation of their home or apartment. Reminder phone calls are made to the parents/guardians to encourage follow-up blood testing until blood lead levels are normal. The parents/guardians and physician are notified of the environmental investigation results and provided recommendations to reduce and prevent further lead exposure.

Lead poisoning cases ≥20 µg/dL

Parents or guardians are contacted by phone and provided lead education and encouraged to schedule an environmental investigation of their home or apartment. Reminder phone calls are made to the parents/guardians to encourage follow-up blood testing until blood lead levels are normal. The parents/guardians and physician are notified of the environmental investigation results and provided recommendations to reduce and prevent further lead exposure.

AHCCCS health plans assist the program with case follow-up. The program provides follow-up information to the case's physician that is essential to clinical management. This information includes source identification and prevention recommendations.

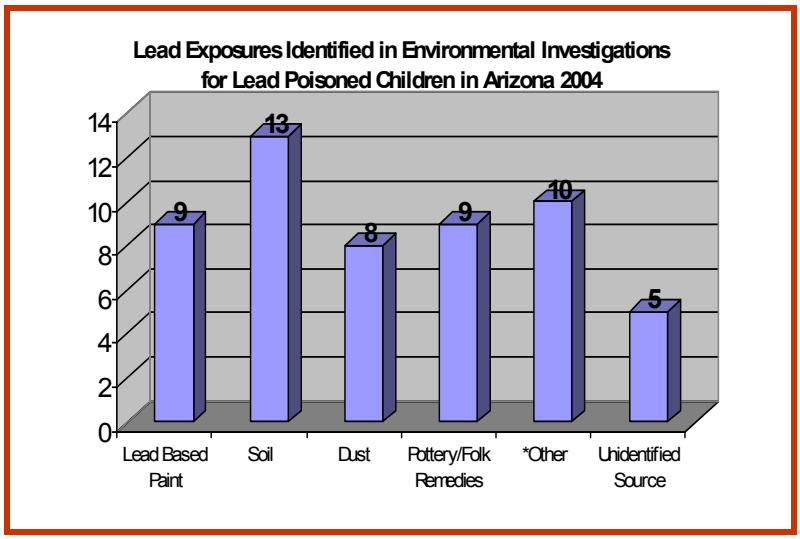
CHILDHOOD LEAD POISONING PREVENTION

The Arizona Childhood Lead Poisoning Prevention Program performs environmental investigations for cases that are moderate to high in severity, ≥20µg/dL, for persistent levels of 15 to 19µg/dL and by request from physicians at lower levels. An environmental investigation consist of an in-home interview, environmental sampling to identify lead sources, and specific intervention recommendations for the family. Paint, soil, dust, and water samples are routinely taken for laboratory analysis. Potential lead exposures such as imported pottery, toys, crayons/chalk and window blinds are also sampled. Lead based paint, soil, and lead containing folk remedies and pottery were the lead exposures most identified. Other sources identified included toys, chalk, vinyl or plastic window blinds, floor tile and out of country exposure.

Environmental Investigations

Parents/guardians are provided with recommendations to further prevent and reduce lead exposures based upon findings of the environmental investigation. Results are also reported to the case's physician.

The chart at right displays the distribution of lead exposures identified during environmental investigations. Thirty six investigations were conducted in 2004.



Children living within the city of Phoenix and within Cochise County are referred to the City of Phoenix Lead Hazard Control Program and the Housing Authority of Cochise County Lead Hazard Control for remediation and abatement services.

Lead containing soil was the lead exposure most identified in environmental investigations conducted in 2004

*Other includes: toys, chalk, window blinds, floor tile and out of country exposure.

CHILDHOOD LEAD POISONING PREVENTION

Education and Outreach

The U.S. Food and Drug Administration (FDA) issued an "Import Alert" on Chaca Chaca candy, a fruit pulp bar coated with chili and salt. Analysis of the Chaca Chaca candy identified it to contain as much as 0.3 to 0.4 micrograms of lead per gram of product. A child consuming this candy could ingest as much as two times the recommended level. The Arizona Department of Health Services issued a news release to warn against consuming the candy. Many newspaper and television news outlets ran the information. Media coverage was available in both English and Spanish.

The Arizona Childhood Lead Poisoning Prevention Program participated in several health fairs and events statewide including Bi-National Public Health Week. Lead education was provided to the communities along the Arizona-Sonora, Mexico border.

The Arizona Childhood Lead Poisoning Prevention Program continues to collaborate with local organizations and agencies to promote prevention education and provide additional services to families of lead poisoned children. Promotoras from Child & Family Resources, INC. and Campesinos Sin Fronteras were provided lead training by program staff. The Promotoras provided valuable home education in Yuma County and in the city of South Tucson. Lead exposure prevention and education is essential to ensuring declining blood lead levels in Arizona's children.

Partnerships

The City of Phoenix Lead Hazard Control Program has been a long time partner and greatly enhances the services provided by the Arizona Childhood Lead Poisoning Prevention Program. The City of Phoenix Lead Hazard Control program takes referrals for homes which have been found to contain lead based paint hazards. Nine cases referred to the City of Phoenix Lead Hazard Control program qualified for lead remediation and abatement this year.

The Housing Authority of Cochise County began their Lead Hazard Control Program. The Housing Authority of Cochise County Lead Hazard Control Program provides a valuable service to one of the highest risk areas for lead poisoning due to older housing. The Arizona Childhood Lead Poisoning Prevention Program referred lead poisoning cases for enrollment for lead remediation and abatement services. Several homes referred to the program are scheduled for completion in 2005.

Collaboration with the Arizona Health Care Cost Containment System (AHCCCS) resulted in the approval of filter paper lead screening methods for reimbursement. Implementation of this method is designed to increase the number of children screened by AHCCCS providers. AHCCCS providers are required to screen children's blood lead levels at 12 months and again at 24 months. Upon report of an elevated blood lead level a venous blood test is required for confirmation.

The Arizona Childhood Lead Poisoning Prevention program worked with Child-Parent Centers, INC. Head Start and Early Head Start to develop and implement a lead screening and education program to increase the number of enrolled children screened for lead poisoning and provide lead education to families.

Partnerships with various types of agencies and organizations at the Federal, State and local levels is essential to strengthen childhood lead poisoning prevention efforts and achieve elimination of childhood lead poisoning in Arizona.

SUNWISE SCHOOL PROGRAM

Exposure to solar and artificial ultraviolet radiation appears to be the most important environmental factor in the development of skin cancer, including the deadliest form melanoma. Eighty percent of a person's lifetime exposure occurs before the age of 18. Blistering sunburns in childhood significantly increases the risk of melanoma skin cancer later in life.[7]

More than 1 million cases of nonmelanoma skin cancer are diagnosed yearly in the United States and are considered to be sun-related. Melanoma skin cancer is the most serious type of skin cancer and will account for about 59,600 of annual cases of skin cancer diagnosed.[8] Arizona ranks No. 2 in the world in skin cancer incidence rates and one in five Arizonans are likely to develop skin cancer in their lifetime.[9]

Most skin cancers are classified as nonmelanoma or melanoma. Nonmelanoma skin cancers usually occur in either basal cells or squamous cells. These cells are located at the base of the outer layer of the skin or cover the internal and external surfaces of the body. Most nonmelanoma skin cancers develop on sun-exposed areas of the body, like the face, ear, neck, lips, and the backs of the hands.[8]

Melanoma is a type of skin cancer that begins in the cells that produce the skin coloring or pigment known as melanin. Melanin helps protect the deeper layers of the skin from the harmful effects of the sun.[8]

In 2003, the Arizona Department of Health Services (ADHS) implemented the SunWise school program to educate Arizona school children to protect themselves from overexposure to the sun. ADHS adopted the U.S. Environmental Protection Agency's SunWise School Curriculum and began promoting the program to Arizona k-8 schools and organizations. Through the use of classroom based, school based and community based components, SunWise develops sustained sun-safe behaviors in school children.

SunWise schools receive free materials that facilitate cross-curricular classroom learning, sunscreen and sunglasses. The program also encourages schools to provide sun-safe infrastructures and to promote sun protection policies for example: providing shade structures, promoting the use of hats, sunscreen and sunglasses. More than 650 schools are voluntarily enrolled in the program and SunWise staff personally educated more than 39,000 children.

SunWise Toolkit

Eighty percent of a person's lifetime exposure occurs before the age of 18.

[7]American Academy of Pediatrics. Committee on Environmental Health. Ultraviolet Light: A Hazard to Children. Pediatrics Vol. 104. No. 2. August 1999.
[8]American Cancer Society. Skin Cancer Facts 2005. Available at URL: http://www.cancer.org/docroot/PED/ped_0.asp
[9]Harris, Robin B. & Alberts, David S. (2004) Strategies for Skin Cancer Prevention. International Journal of Dermatology 43(4), 243-251. doi:10.1111/j.1365-4632.2004.01966.x

SUNWISE SCHOOL PROGRAM

The Arizona SunWise Program has also formed a number of partnerships with organizations including the American Red Cross, Boys and Girls Club, American Cancer Society, Maricopa Medical Society Alliance, SHADE Foundation and many hospitals and county health departments.

The Arizona Department of Health Services sponsors a poster-drawing for school children statewide to increase awareness about sun-safety. The 2004 winning poster is displayed at left. Shannen Pearce, pictured below, created the poster. Shannen is a 4th grade student of Desert Canyon Elementary, Scottsdale, AZ. The winning picture is reproduced into professional posters and distributed state-wide to pediatric and dermatologist offices as well as schools.

The Arizona SunWise Program is a model for other states working to educate and protect children from melanoma and other skin cancers.

Arizona ranks No. 2 in the world in skin cancer incidence rates, one in five Arizonans are likely to develop skin cancer in their lifetime.

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